



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,045	10/29/2003	John T. Coffey	TI-35975 (1962-05700)	5845

23494 7590 01/30/2007
TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER

PHU, PHUONG M

ART UNIT	PAPER NUMBER
----------	--------------

2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/696,045

Applicant(s)

COFFEY, JOHN T.

Examiner

Phuong Phu

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12 and 14-19 is/are rejected.
- 7) ☒ Claim(s) 11 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/3/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 1-5 and 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

-Claim 1 omits structural/functional cooperative relationships of elements “host logic”, “network interface logic” and “antenna” to one another for making the claimed wireless device as a completely connective and operative device.

-Claim 6 omits structural/functional cooperative relationships of elements “host logic”, “means for transmitting symbols” and “antenna” to one another for making the claimed wireless device as a completely connective and operative device.

-Claims, depended on above claims are therefore also rejected.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 6, 8, 10, 12, 14, 16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated Hiben et al (6,721,267).

-Regarding to claim 1, see figures 1 and 5, and col. 3, line 66 to col. 7, line 40, Hiben et al discloses a wireless device (100) (see figure 1), comprising:

Art Unit: 2611

host device (comprising 102, 104, 106) (considered here equivalent to the limitation “host logic”);

network device (comprising 108, 110, 112, 122) (considered equivalent to the limitation “network interface logic”, and hereafter called so); and

an antenna (132);

wherein the network interface logic transmits packets each comprising signals transmitted over 8 tones “sub-channels” per time slot, (e.g., a packet (500) (see figure 5) comprising 24 signals transmitted over 8 tones “sub-channels, each signal respectively spanned a time slot of 24 time slots, the signals considered here equivalent to and called as “symbols”), the symbols containing a plurality of data tones (DATA SYMBOLS) and wherein the network interface logic varies the number of data tones among the symbols (see col. 4, line 66 to col. 7, line 40).

-Regarding to claim 2, Hiben et al discloses that (see figure 5) some symbols transmitted by the network interface logic comprise pilot tones (e.g., (PILOT SYMBOLS)), that are used to facilitate demodulation (see col. 1, lines 35-43), and other symbols do not have pilot tones.

-Regarding to claim 6, as similarly applied to claims 1 and 2 set forth above and herein incorporated, see figures 1 and 5, and col. 3, line 66 to col. 7, line 40, Hiben et al discloses a wireless network comprising:

a first wireless device (100) (see figure 1); and

a second wireless device “multi-carrier receiver” (see col. 9, lines 25-33) configured to communicate with the first wireless device;

wherein the first wireless device transmits to the second wireless device packets containing symbols containing a variable number of data tones.

-Claim 8 is rejected with similar reasons set forth for claim 2.

-Regarding to claim 10, Hiben et al discloses that the number of data tones can be varied among the symbols in a packet according to user specification (see col. 9, lines 10-23).

-Regarding to claim 12, as similarly applied to claims 1, 2, 6 and 8 set forth above and herein incorporated, see figures 1 and 5, and col. 3, line 66 to col. 7, line 40, Hiben et al discloses a method (see figure 1) , comprising:

procedure (108, 110, 112, 122) of determining a number of data tones to include in a symbol;

procedure (108, 110, 112, 122) of forming the symbol with the determined number of data tones;

procedure (108, 110, 112, 122) of transmitting the symbol; and

procedure (108, 110, 112, 122) of changing the number of data tones to form another symbol.

-Regarding to claim 14, Hiben et al discloses procedure (108, 110, 112, 122) of varying a number of pilot tones (see figure 5).

-Regarding to claim 16, as similarly applied to claims 1, 2, 6, 8, 12 and 14 set forth above and herein incorporated, see figures 1 and 5, and col. 3, line 66 to col. 7, line 40, Hiben et al discloses a wireless device (see figure 1); comprising:

host logic (comprising (120, 104, 106));

an antenna (132); and

means (comprising (108, 110, 112)) for transmitting symbols containing a plurality of data tones and for varying the number of data tones among the symbols.

-Claim 17 is rejected with similar reasons set forth for claim 14.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, 7, 9, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiben et al.

-Regarding to claims 3, 9, 15, Hiben et al does not teach that some symbols comprise 48 data tones and 4 pilot tones and other symbols comprise 52 data tones and no pilot tones, as claimed.

However, Hiben et al discloses that some symbols comprise 4 data tones and 4 pilot tones (e.g., symbols of times slots (11, 17) (see figure 5)) and other symbols comprise 8 data tones and no pilot tones (e.g., symbols of times slots (6-10) (see figure 5)). Hiben et al further teaches that other time slot structures for a particular number of data tones and a particular number of pilot tones are possible (see col. 9, lines 10-15).

It would have been obvious for one skilled in the art, based upon a system specification, to be able to implement Hiben et al wireless device/method in such way that some symbols comprise 48 data tones and 4 pilot tones and other symbols comprise 52 data tones and no pilot tones so that the wireless device/method would become another Hiben et al derived embodiment.

-Regarding to claims 4, 18, Hiben et al does not disclose that the number of data tones is varied according to user input, as claimed.

However, Hiben et al discloses that the wireless device can be implemented by a programmable DSP, e.g., DSP 56000, for performing the wireless device functions (see col. 4, lines 8-15).

DSP 56000's permitting the loading of user programs inputted by a user for instructing their functions are well-known in the art, and the examiner takes Official Notice.

It would have been obvious for one skilled in the art to implement Hiben et al with a DSP 56000 in such way that according to user programs inputted by a user, the DSP 56000, when executing the user programs, would carry out functions of the wireless device, e.g., the number of data tones would be varied by the DSP 56000, so that the wireless device would perform its operations at very high speeds.

-Regarding to claim 7, Hiben et al does not disclose that the second wireless device transmits to the first wireless device packets containing symbols containing a variable number of data tones, as claimed.

However, Hiben et al teaches that his invention can be applied for voice communications (i.e., two-way communications) (see col. 1, lines 14-59). As such, In Hiben et al, the second wireless device inherently must be configurable to transmit signals to the first wireless device.

Since Hiben et al does not teach in detail how the second wireless device transmits the signals to the first wireless device, it would have been obvious for one skilled in the art to configure the second wireless device, as similarly applied to the first wireless device as taught

Art Unit: 2611

by Hiben et al, to transmit the signals, in packets, containing symbols containing a variable number of data tones, so that voice communications could be carried out.

Allowable Subject Matter

6. Claims 11 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 5 and 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Phuong Phu
01/25/07

PHUONG PHU
PRIMARY EXAMINER

Phuong Phu
Primary Examiner
Art Unit 2611